

Work Order ID 75636

\*75636\*

Page 1

October-27-11 11:39:30 AM

Item ID: D6004-115 Accept \*N9000040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Crosstube Material  
 Start Date: 27/10/2011 Start Qty: 40.00 \*40\* Cust Item ID:  
 Required Date: 30/04/2013 Req'd Qty: 40.00 \*40\* Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: 11/10/12 Tooling: Date: Run Start \*NR1\*  
 QC: Date: SPC (Y/N): Date: 9 Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6004	Rev A								

100 0.00  
 \*100\* PURCHASING  
 Purchasing Memo 0.00  
 Purchasing Issue P/O 15347 a) Extrude as per Dwg D6004b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11 ) seamless aluminum tube(c)Minimum ultimate tensile strength = 77 ksid)Minimum tensile yield strenght=66 ksid)Material certification  
CL 11/01/03 40

110 0.00  
 \*110\* Receive & Inspect for Damage & Mat'l Certs  
 Packaging Memo 0.00  
 Packaging Ensure material certification is attached  
PC 12/6/15 (G)

120 0.00 - see inspection sheet  
 QC has to be Attached  
 \*120\* Memo 0.00  
 QC Ensure Material certification comply to Dwg D6004 8/2/10/10  
28/01/9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 75636**

October-27-11 11:39:30 AM

**\*75636\***

Page 2

Item ID: D6004-115      Accept      **\*N900040100\***      Setup      Start      **\*NS1\***  
Revision ID:      Stop      **\*NS2\***  
Item Name: Crosstube Material  
Start Date: 27/10/2011      Start Qty: 40.00      **\*40\***      Cust Item ID:  
Required Date: 30/04/2013      Req'd Qty: 40.00      **\*40\***      Customer:  
Reference:

Approvals:      Process Plan:      Date:      Tooling:      Date:      Run      Start      **\*NR1\***  
QC:      Date:      SPC (Y/N):      Date:      Stop      **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130	Chemical Conversion Coat per QSI005 4.1	0.00							
<b>*130*</b>									
HandFinish	Memo	0.00							
Hand Finishing									

140	Identify as per dwg & Stock Location: <i>Back</i>	0.00							
<b>*140*</b>									
Packaging	Memo	0.00							
Packaging									

150	QC21- Final Inspection - Work Order Release	0.00							
<b>*150*</b>									
QC	Memo	0.00							
Quality Control									

*N/A**1110 12-5-15*  
*x40**12/5/16*  
*MLJ 12/05/15*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

October-27-11 11:39:34 AM

Page 1

Work Order ID: 75636

**\*75636\***

Parent Item: D6004-115

**\*D6004-115\***

Parent Item Name: Crosstube Material

Start Date: 27/10/2011

Required Date: 30/04/2013

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP Rev:B 00.12.15 Added: Issue P/O EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6004-115P		Purchased	No			110	Each	0.0000	1	40			
<b>*D6004-115P*</b>									<b>**</b>				
Crosstube material													

*Handwritten signature/initials*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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**NOTE:** Date & initial all entries



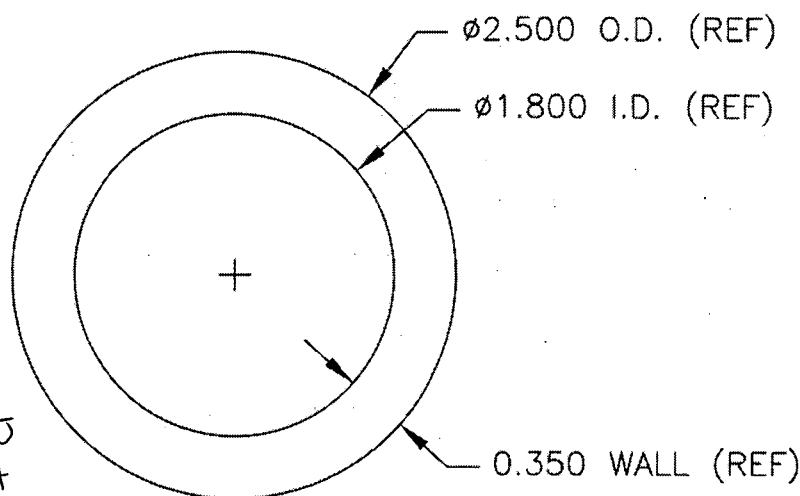
DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D6004	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
00.11.24 *#*

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT

WITHOUT NOTICE  
WORK ORDER  
NO. *75636 H.L.J*  
*11/10/27*



### NOTES

- 1) D6004-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 115" LONG TUBE: D6004-115

- 2) MATERIAL: 2.500 OD x 0.350 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.006$  MEAN ( $\pm 0.012$  INCLUDING OVALITY)  
WALL:  $\pm 0.015$  MEAN ( $\pm 0.035$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



Packinglist ALUnna AG

ALUnna ref. no.	44990/200
Customer PO.	PO. 15347
Date:	03.30.12

Boxmarking:-

Dart Aerospace PO. 15347  
D6004 - 115  
Made in Germany Dest.: Hawkesbury Ont, Canada

We hereby declare that the wooden packing material are totally free from bark and apparently

**free from live plant pests**

[illegible]

# Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

**Kunde:** Dart Aerospace Ltd.

Client:

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Zeugnisnummer:** 428/12

Cert No.: / No. du certificat:

**Bestellnummer:**

Order No. / No. de commande

PO 15347

**Auftrag:**

44990/200

Our Reference/Notre Reference:

**Produkt:**

Product / Produit:

Rohre nahtlos gepresst

Tubes seamless extruded

**Spezifikation:**

Specification:

AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6004

**Werkstoff:**

Alloy/Alliage:

7075

**Zustand:**

Temper/Etat

T 6511

**Abmessung**

Size / Dimension

2,500 INCH x 1,800 INCH x 0,350 INCH x 115,000 INCH

D6004-115 2.500 X 0.350 X 115

**Kennzeichnung**

Marking/Marquage:

Cert. No. 428/12 - ALUnna - 7075 - T6511 - Cast No. 7400 - AMS - QQ - A - 200/11 - 2.500" OD x 0.350" Wall - Heat Lot No. 1401164 - ALUnna Order Conf. No. 44990/200-1 - P.O. 15347

**Lieferung**

Delivered Material / Matériel délivré:

pcs.

lbs

40

1113

**Country of Manufacture: Germany**

Products are in accordance with applicable RoHS

## 1. Chemische Analyse

## Chemical Analysis / analyse chimique

Elemente ohne Grenzwerte:

einzelnen max. 0,05 %, insgesamt 0,15 %

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
7400/12		0,097	0,189	1,441	0,064	2,465	0,200	5,820	0,041	0,003	0,0321	0,0001	0,0012	0,0001

Hydrogen content: 0,10

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

## 2. Mechanische Eigenschaften

## Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min. max.	77,0	66,0				
1	86,130	79,025	8,0			1401164

8/2/07/10

RMS: outside 25 - max. 9,8 µ"

**Ergebnis der  
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande



## EXTRUSION INSPECTION SHEET

							ULTRA SONIC MEASUREMENTS				
TUBE #	TOTAL LENGTH	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at 12"	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	115.00"	2.500"	1.800"	0.350"	0.010"	N/A	MIDDLE				
1	115.000"	2.498"/2.501"	1.786"	0.344"/0.368"	0.014"	N/A	57.500"	0.347"	0.362"	0.367"	0.355"
2	115.000"	2.499"/2.499"	1.787"	0.346"/0.360"	0.009"	N/A	57.500"	0.350"	0.364"	0.364"	0.355"
3	115.000"	2.500"/2.499"	1.782"	0.348"/0.361"	0.020"	N/A	57.500"	0.349"	0.369"	0.363"	0.347"
4	115.000"	2.502"/2.503"	1.788"	0.348"/0.361"	0.006"	N/A	57.500"	0.365"	0.353"	0.353"	0.363"
5	115.000"	2.499"/2.501"	1.785"	0.347"/0.362"	0.011"	N/A	57.500"	0.358"	0.367"	0.365"	0.351"
6	115.000"	2.499"/2.499"	1.784"	0.340"/0.376"	0.021"	N/A	57.500"	0.345"	0.362"	0.367"	0.353"
7	115.000"	2.496"/2.497"	1.788"	0.345"/0.361"	0.012"	N/A	57.500"	0.347"	0.362"	0.372"	0.360"
8	115.000"	2.496"/2.499"	1.788"	0.347"/0.360"	0.023"	N/A	57.500"	0.349"	0.355"	0.364"	0.364"
9	115.000"	2.501"/2.501"	1.785"	0.349"/0.362"	0.025"	N/A	57.500"	0.362"	0.369"	0.362"	0.347"
10	115.000"	2.502"/2.503"	1.796"	0.343"/0.358"	0.015"	N/A	57.500"	0.358"	0.358"	0.351"	0.356"
11	115.000"	2.502"/2.506"	1.784"	0.347"/0.362"	0.015"	N/A	57.500"	0.362"	0.364"	0.359"	0.354"
12	115.000"	2.500"/2.499"	1.788"	0.348"/0.361"	0.012"	N/A	57.500"	0.344"	0.351"	0.365"	0.372"
13	115.000"	2.503"/2.506"	1.780"	0.354"/0.360"	0.008"	N/A	57.500"	0.367"	0.369"	0.358"	0.349"
14	115.000"	2.494"/2.495"	1.788"	0.347"/0.361"	0.014"	N/A	57.500"	0.367"	0.365"	0.349"	0.354"
15	115.000"	2.494"/2.494"	1.790"	0.340"/0.360"	0.014"	N/A	57.500"	0.346"	0.362"	0.367"	0.356"
PART # d6004-115		P/O# 15347		BATCH # B75636		Notes:					

REFERENCE ONLY

*8/2/10*

